TECHNICAL BASIS FOR TIER I OPERATING PERMIT

DATE: September 3, 2002

PERMIT WRITER: Carole Zundel

PERMIT COORDINATOR: Bill Rogers

SUBJECT: *TECHNICAL MEMORANDUM FOR TIER I OPERATING PERMIT*
AIRS Facility No. 005-00038, Harpers, Inc., Post Falls
Final Tier I Operating Permit

Permittee:	Harpers, Inc.
Permit Number:	055-00038
Air Quality Control Region:	062
AIRS Facility Classification:	A
Standard Industrial Classification:	2520
Zone:	11
UTM Coordinates:	502.3 , 5284.7
Facility Mailing Address:	1881 W. Seltice Way, Post Falls, ID 83854
County:	Kootenai
Facility Contact Name and Title:	Robin Hunt, Safety and Environmental Manager
Contact Name Phone Number:	(208) 777-8400
Responsible Official Name and Title:	Stewart Long, General Manager
Exact plant Location:	1881 W. Seltice Way, Post Falls, Idaho
General Nature of Business & Kinds of Products:	Manufacture of metal office furniture

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LIST OF ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal units
CFR	Code of Federal Regulations
CO	carbon monoxide
cfm	cubic feet per minute
DEQ	Idaho Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAPs	hazardous air pollutants
HVLP	high-volume low-pressure
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act.
km	kilometer
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMBtu/Hr	Million British thermal units per hour
MMscf	million standard cubic feet
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
scf	standard cubic feet
SIP	State Implementation Plan
SO_2	sulfur dioxide
T	ton(s)
T/yr	tons per year
VOC	volatile organic compound

PUBLIC COMMENT / AFFECTED STATES / EPA REVIEW SUMMARY

A 30-day public comment period for the Harpers, Inc. (Harpers) draft Tier I operating permit was held from April 10 through May 9, 2002, as required by IDAPA 58.01.01.364 (*Rules for the Control of Air Pollution in Idaho*). No comments were received. No hearing was requested.

IDAPA 58.01.01.008.01, defines *affected states* as: "*All states: whose air quality may be affected by the emissions of the Tier I source and that are contiguous to Idaho; or that are within fifty (50) miles of the Tier I source.*"

A review of the site location information included in the permit application indicates that the facility is located within 50 miles of a state border. Therefore, the state of Washington was provided an opportunity to comment on the draft Tier I operating permit.

After the public comment period, the EPA was sent the proposed operating permit and the technical memorandum for their 45-day review period. The EPA did not provide written objection on the proposed permit.

1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this final Tier I operating permit in accordance with IDAPA 58.01.01.362, *Rules for the Control of Air Pollution in Idaho.*

The DEQ has reviewed the information provided by Harpers regarding the operation of their facility located in Post Falls, Idaho. This information was submitted based on the requirements to submit a Tier I operating permit in accordance with IDAPA 58.01.01.300.

2. SUMMARY OF EVENTS

On December 2, 1998, DEQ received the Tier I operating permit application from Harpers for its Post Falls facility.

On December 6, 2001, DEQ received supplemental information via email.

On February 26, 2002, DEQ sent the draft Tier I operating permit to the facility for a facility review.

On March 14, 2002, DEQ received comments from the facility regarding the draft Tier I operating permit. The comments were addressed in a phone call from Carole Zundel at DEQ to Robin Hunt of Harpers on March 15, 2002.

Between April 10 and May 9, 2002, a public comment period was held. No comments were received. No hearing was requested.

On June 5, 2002, EPA was sent a copy of the proposed Tier I operating permit. The EPA had no comments.

3. BASIS OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier I operating permit:

- Tier I operating permit application, received December 2, 1998, and revisions received December 6, 2001, via e-mail
- Applicable requirements contained in Permit to Construct (PTC) No. 055-00038 have been included in the facility's Title V operating permit
- Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, January 1995, Office of Air Quality Planning and Standards, EPA
- Guidance developed by the EPA and DEQ
- Title V permits issued by other jurisdictions
- Documents and procedures developed in the Title V Pilot Operating Permit Program

4. FACILITY DESCRIPTION

4.1 GENERAL PROCESS DESCRIPTION

Harpers' manufacturing processes consist of:

1. Steel fabrication and paint areas to produce office furniture, including metal file cabinets, desks, and overhead cabinets.

2. Panel manufacturing area that produces office panel partitions; paint storage, mixing, and pump rooms; and a manufacturing area that produces work surfaces with high-density laminate overlays.

Coils of steel are cut to size, and then are notched, slit, or bent, according to the type of product being produced. The formed part is then spot welded or brazed. Two natural gas-fired heaters are used in the steel fabrication area for space heating.

The formed steel parts are then washed in a five-stage washer. Wash water is heating by natural gas-fired heaters. From the washer, the steel parts pass through the dry-off oven, which uses a natural gas-fired burner as the heat source. The parts leave the dry-off oven and continue through a cool down tunnel and then proceed into the painting process.

Steel parts at this point are directed to either of two different finishing sections on the paint line. The first section consists of one paint spray booth that is used for very short production runs. Here, paint is applied manually using an electrostatic high-volume low-pressure (HVLP) spray gun. The second section is the auto line, which consists of six paint spray booths. The first booth in the auto line is a manual station where paint is applied by electrostatic HVLP spray guns. In the next three spray booths, paint is applied automatically by electrostatic bells. The last two spray booths are used for touch-up. Here, paint is applied manually using electrostatic HVLP spray guns.

From the painting line, the painted parts continue on a conveyor through an enclosed ambient flash-off section, and then a two-stage natural gas-fired bake oven.

After drying, the painted steel parts are manually off-loaded; the components are assembled and packaged on one of four assembly lines prior to warehousing and shipping.

In the panel manufacturing area, panels are produced for partitioning office areas into cubicles. Aluminum frame parts are cut to specific lengths, then notched as needed to form the panel frame. Steel sheets are brought from steel fabrication and are cut to size. The sheets are then washed in a two-stage washer to prepare for gluing. Water-based glue is applied by air spray to the flat surface. The sheets go into an electric infrared oven that dries the glue to a tacky state. The aluminum frame parts also receive a coat of glue applied by roller and are dried in a small infrared oven. The steel sheets are placed on the aluminum frame. A pre-cut fiberglass panel is placed on the glue-coated flat steel surface. Then fabric is attached to the panels.

The metal paints and solvents storage area has a distillation unit for recycling the flushing solvent used during color changes. The distillation process is a closed loop system. Adjacent to the paint storage room are a paint mixing room and a paint pump room. Paints are mixed to adjust color or viscosity, to mix reclaimed paint from the booth recovery systems, and to intermix colors from the paint supplier. Paints taken to the paint room from the manual booth are placed in five-gallon pails, which are pumped directly to the electrostatic spray gun.

To manufacture work surfaces, high-density laminate is glued to fiberboard sheets with a roll coat application of water-based glue. The laminated panels are set in a cold press for glue cure prior to cutting to

size using a panel saw or router. Sawdust is collected in one of two internal baghouses that return filtered air into the room. Then a melamine banding material is glued to the edge of the work surface using a solvent-based contact adhesive. A spray booth in this area is used for glue application in this process.

A burn-off oven is located on a mezzanine above the paint storage, mixing, and pump rooms. The burn-off oven is used for burning off dried paint from conveyor part hangers and other paint-encrusted steel parts.

4.2 FACILITY CLASSIFICATION

The facility is classified as a Tier I major facility in accordance with IDAPA 58.01.01.008.10, because the facility emits or has the potential to emit (PTE) a regulated air pollutant in amounts greater than or equal to 100 tons per year (T/yr). The facility is also major as defined in IDAPA 58.01.01.006.55, but is not subject to Prevention of Significant Deterioration (PSD) permitting requirements because the facility's PTE is less than 250 T/yr. The facility is not a designated facility as defined by IDAPA 58.01.01.006.27. The Standard Industrial Classification Code defining the facility is 2520. The AIRS facility classification code is A.

4.3 AREA CLASSIFICATION

This facility is located Kootenai County which is located in Air Quality Control Region 62. This area is designated attainment or unclassifiable for all federal and state criteria air pollutants. There are no Class I areas within 10 km of the facility.

4.4 PERMITTING HISTORY

January 11, 1993	The original PTC was issued.
June 23, 1994	A modified PTC was issued to incorporate the following changes: • two of the paint booths in the sheet metal process were split into four booths to accommodate a robotic paint spraying system; • paint recovery systems were added to each of the sheet metal paint booths, and the number of colors of allowable paints were expanded; • the monthly performance tests were replaced with a monthly inventory-based emission estimate, which had been approved by the EPA.
October 2, 1995	A modified permit was issued.
March 18, 1996	The October 2, 1995 PTC was modified to change the methods used to determine compliance with the emission limits.
March 30, 1998	The March 18, 1996 PTC was modified to change the methods used to determine compliance with the volatile organic compound (VOC) emission limits in the permit. Specifically, the permittee requested to subtract the VOCs leaving the facility as hazardous waste from the calculations of VOCs emitted to ambient air. Also, the permittee requested that the filters on the paint booths be changed out every five days of operation, as opposed to being changed out based on a pressure drop across the filters. The permittee also requested that the wood process be removed from the permit, as it no longer exists at the facility. This permit superseded the PTC issued on March 18, 1996.
June 11, 1999	A modified PTC was issued.
August 18, 1999	An amended PTC was issued to incorporate a change to the VOC usage calculation regarding paint waste volume generated per color changeover. This permit replaces the permit issued on March 30, 1998.
March 15, 2002	A modified PTC was issued.

4.5 EMISSIONS DESCRIPTION

This facility's emissions sources, stack information, and emitted pollutants are provided in Table 4.5.1.

4.5.1 Grain-loading Requirements – [IDAPA 58.01.01.675, 4/5/00]

Compliance with the particulate matter grain-loading standard is demonstrated by the exclusive use of natural gas. The Tier OPERATING PERMIT requires the facility combust only natural gas in the emissions units.

Table 4.5 EMISSIONS DESCRIPTION SUMMARY

Source	Stack Identification Number	Pollutant	Emission Rate Limit
Dry-Off Oven	Stack 23	NO_x	0.49 lb/hr, 2.15 T/yr
	Stack 24		0.49 lb/hr, 2.15 T/yr
Bake Oven	Stack 26	NO_x	0.74 lb/hr, 3.26 T/yr
	Stack 29		0.75 lb/hr, 3.27 T/yr
	Stack 30		0.75 lb/hr, 3.27 T/yr
Burn-Off Oven	Stack 38	NO_x	0.67 lb/hr, 2.94 T/yr
Facility-wide Paint, Solvent, Adhesive, and Other Chemical Use	Various Stacks	VOC Content of Paint Applied	7.51 lb/gal, 40,833 lb/mo, 245.0 T/yr
		PM_{10}	1.4 lb/hr, 6.13 T/yr
		Formaldehyde	264 lb/yr

5. *REGULATORY ANALYSIS*

5.1 FACILITY-WIDE APPLICABLE REQUIREMENTS

5.1.1 Fugitive Particulate Matter - IDAPA 58.01.01.650-651

5.1.1.1 Requirement

Permit Condition 1.1 states that all reasonable precautions shall be taken to prevent particulate matter (PM) from becoming airborne in accordance with IDAPA 58.01.01.650-651.

5.1.1.2 Compliance Demonstration

Permit Condition 1.2 states that the permittee is required to monitor and maintain records of the frequency and the methods used by the facility to reasonably control fugitive emissions. IDAPA 58.01.01.651 gives some examples of ways to reasonably control fugitive emissions, which include using water or chemicals, applying dust suppressants, using control equipment, covering trucks, paving roads or parking areas, and removing materials from streets.

Permit Condition 1.3 requires that the permittee maintain a record of all fugitive dust complaints received. In addition, the permittee is required to take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The permittee is also required to maintain records that include the date each complaint was received, and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

To ensure that the methods being used by the permittee reasonably control fugitive emissions, whether or not a complaint is received, Permit Condition 1.4 requires that the permittee conduct periodic inspections of the facility. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emission inspection.

Both Permit Conditions 1.3 and 1.4 require the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive particulate emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.1.2 Control of Odors - IDAPA 58.01.01.775-776

5.1.2.1 Requirement

Permit Condition 1.5 and IDAPA 58.01.01.776 both state: *"No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution."* This condition is currently considered federally enforceable until such time it is removed from the State Implementation Plan (SIP), at which time it will be a state-only enforceable requirement.

5.1.2.2 Compliance Demonstration

Permit Condition 1.6 requires the permittee to maintain records of all odor complaints received. If the complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. The records are required to contain the date that each complaint was received, and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 1.6 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.1.3 Visible Emissions - IDAPA 58.01.01.625

5.1.3.1 Requirement

IDAPA 58.01.01.625 and Permit Condition 1.7 state: *"(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined [by IDAPA 58.01.01.625]."* This provision does not apply when the presence of uncombined water, NO_x, and/or chlorine gas is the only reason for the failure of the emission to comply with the requirements of this rule.

5.1.3.2 Compliance Demonstration

To ensure reasonable compliance with the visible emissions rule, Permit Condition 1.8 requires that the permittee conduct routine inspections of the facility. The permittee is required to inspect potential sources of visible emissions during daylight hours and under normal operating conditions. The inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission covered by this section, the permittee must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess emissions rules in IDAPA

58.01.01.130-136. The permittee is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

It should be noted that if a specific emissions unit has a specific compliance demonstration method for visible emissions that differs from Permit Condition 1.8, then the specific compliance demonstration method overrides the requirement of Condition 1.8. Permit Condition 1.8 is intended for small sources that would generally not have any visible emissions.

Permit Condition 1.8 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

5.1.4 Startup, Shutdown, Scheduled Maintenance, Safety Measures, Upset, and Breakdown - IDAPA58.01.01.130-136

5.1.4.1 Requirement

Permit Condition 1.9 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical analysis. It should; however, be noted that subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under subsection 131.02 to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states "*The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*" Failure to prepare or file procedures pursuant to Sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in Subsections 133.02, 133.03, 134.04, and 134.05, and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

5.1.4.2 Compliance Demonstration

The compliance demonstration is contained within Permit Condition 1.9. No further clarification is necessary here.

5.1.5 Open Burning

Harpers is required to follow the procedures in IDAPA 58.01.01.600-616, Rules for Control of Open Burning.

5.1.6 Renovation/Demolition

Harpers is required to follow the procedures in all applicable portions of 40 CFR Part 61, Subpart M when conducting any renovation or demolition activities at the facility.

5.1.7 Chemical Accident Prevention Provisions

Any facility that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, must comply with the requirements of the Chemical Accident Prevention Provisions at 40 CFR Part 68 no later than the latest of the following dates:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130.
- The date on which a regulated substance is first present above a threshold quantity in a process.

5.1.8 Recycling and Emission Reductions

Harpers is required to comply with applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction.

5.1.9 Fuel-burning Equipment

No monitoring or recordkeeping was required in the permit because natural gas is the only fuel used, and all fuel-burning equipment uses are insignificant sources.

5.1.10 Fuel Sulfur Content

No fuel oil is used at the facility.

5.1.11 New Source Performance Standards (NSPS)

This facility is subject to 40 CFR Part 60 Subpart EE. In addition to the applicable performance standards mandated by Subpart EE, the facility must also comply with applicable sections of 40 CFR Part 60, Subpart A (NSPS General Provisions).

5.1.12 Maximum Achievable Control Technology (MACT)

The new metal furniture MACT, Subpart RRRR, is scheduled to be issued as a final regulation in May 2002. The Tier I OPERATING PERMIT being prepared for Harpers requires compliance with 40 CFR Part 63, Subpart RRRR once it becomes final.

This facility is not subject to 40 CFR Part 63, Subpart JJ, Wood Furniture Manufacturing, because no wood furniture is manufactured at the facility. Wood is used when manufacturing work surfaces, which uses particleboard. 40 CFR Part 63 Subpart JJ states:

40 CFR 63.800 Applicability

In accordance with 40 CFR 63.811: "*(a) The affected source to which this subpart applies is each facility that is engaged, either in part or in whole, in the manufacture of wood furniture or wood furniture components and that is located at a plant site that is a major source as defined in 40 CFR part 63, subpart A, § 63.2. The owner or operator of a source that meets the definition for an incidental wood furniture manufacturer shall maintain purchase or usage records demonstrating that the source meets the definition in § 63.801 of this subpart, but the source shall not be subject to any other provisions of this subpart.*
40 CFR 63.801 Definitions

Incidental wood furniture manufacturer means a major source that is primarily engaged in the manufacture of products other than wood furniture or wood furniture components and that uses no more than 100 gallons per month of finishing material or adhesives in the manufacture of wood furniture or wood furniture components.

Wood furniture means any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434, 2511, 2512, 2517, 2519, 2521, 2531, 2541, 2599, or 5712.

Wood furniture component' means any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops. However,

foam seat cushions manufactured and fabricated at a facility that does not engage in any other wood furniture or wood furniture component manufacturing operation are excluded from this definition."

Laminated tops are manufactured at Harpers, but not for wood furniture. Therefore, 40 CFR Part 63, Subpart JJ does not apply to this facility.

5.1.13 Compliance Testing

All compliance testing shall be conducted according to the Test Methods and Procedures contained in IDAPA 58.01.01.157.

5.1.14 Monitoring and Recordkeeping

All monitoring and recordkeeping shall be in compliance with Permit Condition 1.11.

5.2 EMISSIONS UNIT – DRY-OFF OVEN

5.2.1 Emissions Unit Description

Steel furniture parts go through a washing operation. When the parts exit the last stage of the washer, they are carried by the overhead conveyor through the dry-off oven. This oven is heated by a natural gas-fired burner having a heat-input capacity of 3.5 MMBtu/hr. The burner has two stacks; stack 23 and stack 24.

5.2.2 Permit Requirement - NO_x Daily and Annual Limits - [IDAPA 58.01.01.322.01, 3/19/99 and PTC No. 055-00038, 3/15/02]

5.2.2.1 Applicability

The allowable NO_x emissions from each dry-off oven stack is 0.49 lb/hr and 2.49 T/yr.

5.2.2.2 Monitoring, Recordkeeping, and Reporting

Compliance with the NO_x emission rate limits is demonstrated through the exclusive use of natural gas, and the limit placed on the burners heat-input capacity. The following calculations support this determination. Published emission factors from EPA's AP-42[1] for natural gas combustion sources were used to estimate potential NO_x emissions from the dry-off oven.

Hourly NO_x PTE:

3.5 MMBtu/hr x 1 scf NG/1,050 Btu x 2.2 lb NO_x /MMscf = 0.0073 lb NO_x /hr.

Annual NO_x PTE

0.0073 lb NO_x /hr x 8,760 hr/yr x 1T/2,000 lb = 0.032 T NO_x/yr.

As indicated in the above calculations, hourly and annual potential NO_x emissions are well below the allowable emission rate limits.

[1] Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition (Research Triangle Park, NC: EPA, Office of Air Quality Planning and Standards, AP-42, January 1995), p. 1.4-6, Table 1.4-2.

5.2.3 Permit Requirement – Visible Emissions - [IDAPA 58.01.01.625, 4/5/00, and PTC No. 055-00038, 3/15/02]

5.2.3.1 Applicability

The dry-off oven stacks are subject to IDAPA 58.01.01.625.

5.2.3.2 Monitoring, Recordkeeping, and Reporting

Monitoring, recordkeeping and reporting requirements for visible emissions from the dry-off oven stacks are contained in Permit Conditions 1.8, 1.10, and 1.11, respectively.

5.2.4 Permit Requirement - Natural Gas Use - [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.2.4.1 Applicability

Natural gas is the only fuel allowed to be combusted in the dry-off oven by PTC No. 055-00038 and IDAPA 58.01.01.322.

5.2.4.2 Monitoring, Recordkeeping, and Reporting

No monitoring, recordkeeping, or reporting for natural gas use is required as a means to demonstrate compliance with the allowable NO_x emission limits. Potential NO_x emissions from the dry-off oven burner are so small and past modeling has indicated its operation at maximum capacity will not exceed any ambient air quality standard, that compliance with the NO_x emission rate limits is inherently demonstrated by limiting the heat-input capacity of the oven's burner and requiring it be fueled by natural gas exclusively. DEQ believes requiring monitoring and recordkeeping of fuel consumption is burdensome and serves no environmental benefit.

5.3 EMISSIONS UNIT - BAKE OVEN

5.3.1 Emissions Unit Description

After the dry-off oven, the parts are painted and conveyed to a two-stage bake oven. Bake oven stage 1 and stage 2 each use a 6 MMBtu/hr natural gas-fired burner to supply heat to dry the paint. A third 6 MMBtu/hr natural gas-fired burner is used in a space heater that provides heat for the bake oven room during the winter months. Bake oven stages 1 and 2 exhaust emissions through stacks 29 and 30, respectively. The bake oven space heater stack is stack 26.

5.3.2 Permit Requirement - NO_x Daily and Annual Limits - [IDAPA 58.01.01.322.01, 3/19/99, PTC No. 055-00038, 3/15/02]

5.3.2.1 Applicability

Bake oven stack 26 is limited to 0.74 lb/hr and 3.74 T/yr of NO_x emissions. Bake oven stacks 29 and 30 are each limited to 0.75 lb/hr and 3.75 T/yr of NO_x emissions

5.3.2.2 Monitoring, Recordkeeping, and Reporting

Compliance with the NO_x emission rate limits is demonstrated through the exclusive use of natural gas, and the limit placed on the burners heat-input capacities. The following calculations support this determination. Published emission factors from EPA's AP-42[2] for natural gas combustion sources were used to estimate potential NO_x emissions from the bake oven.

Hourly NO_x PTE, each burner:

6 MMBtu/hr x 1 scf NG/1,050 Btu x 2.2 lb NO_x /MMscf = 0.013 lb NO_x /hr.

Annual NO_x PTE, each burner

0.013 lb NO_x /hr x 8,760 hr/yr x 1T/2,000 lb = 0.06 T NO_x/yr.

As indicated in the above calculations, hourly and annual potential NO_x emissions are well below the allowable emission rate limits.

5.3.3 Permit Requirement – Visible Emissions - [IDAPA 58.01.01.625, 4/5/00, and PTC No. 055-00038, 3/15/02]

5.3.3.1 Applicability

Each bake oven stack, stacks 26, 29, and 30, is subject to IDAPA 58.01.01.625.

5.3.3.2 Monitoring, Recordkeeping, and Reporting

Monitoring, recordkeeping and reporting requirements for visible emissions from the bake oven stacks are contained in Permit Conditions 1.8, 1.10, and 1.11, respectively.

5.3.4 Permit Requirement - Natural Gas Use - [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.3.4.1 Applicability

The exclusive use of natural gas in the bake oven is required by PTC No. 055-00038 and IDAPA 58.01.01.322.14. The exclusive use of natural gas in the bake oven room space heater is required by IDAPA 58.01.01.322.14.

5.3.4.2 Monitoring, Recordkeeping, and Reporting

No monitoring, recordkeeping, or reporting for natural gas use is required as a means to demonstrate compliance with the allowable NO_x emission limits. Potential NO_x emissions from the bake oven burners are so small and past modeling has indicated its operation at maximum capacity will not exceed any ambient air quality standard, that compliance with the NO_x emission rate limits is inherently demonstrated by limiting the heat-input capacity of the burners and requiring they be fueled by natural gas exclusively. DEQ believes

[2] Ibid.

requiring monitoring and recordkeeping of fuel consumption is burdensome and serves no environmental benefit.

5.4 EMISSIONS UNIT - BURN-OFF OVEN

5.4.1 Emissions Unit Description

The burn-off oven is used to thermally clean hooks that convey painted parts through the dry-off oven and bake oven. The burn-off oven's burner is rated at 2 MMBtu/hr.

5.4.2 Permit Requirement - NO_x Daily and Annual Limits - [IDAPA 58.01.01.322.01, 3/19/99, PTC No. 055-00038, 3/15/02]

5.4.2.1 Applicability

The burn-off oven stack is limited to 0.67 lb/hr and 2.94 T/yr of NO_X emissions.

5.4.2.2 Monitoring, Recordkeeping, and Reporting

Compliance with the NO_x emission rate limits is demonstrated through the exclusive use of natural gas, and the limit placed on the burners heat-input capacity. The following calculations support this determination. Published emission factors from EPA's AP-42[3] for natural gas combustion sources were used to estimate potential NO_x emissions from the burn-off oven.

Hourly NO_x PTE:

2.0 MMBtu/hr x 1 scf NG/1,050 Btu x 2.2 lb NO_x /MMscf = 0.0042 lb NO_x /hr.

Annual NO_x PTE:

0.0042 lb NO_x /hr x 8,760 hr/YR x 1T/2,000 lb = 0.018 T NO_x/yr.

As indicated in the above calculations, hourly and annual potential NO_x emissions are well below the allowable emission rate limits.

5.4.3 Permit Requirement – Visible Emissions - [IDAPA 58.01.01.625, 4/5/00 and PTC No. 055-00038, 3/15/02]

5.4.3.1 Applicability

The burn-off oven stack is subject to IDAPA 58.01.01.625.

5.4.3.2 Monitoring, Recordkeeping, and Reporting

Monitoring, recordkeeping and reporting requirements for visible emissions from the burn-off oven stack is contained in Permit Conditions 1.8, 1.10, and 1.11, respectively.

[3] Ibid.

5.4.4 Permit Requirement - Natural Gas Use - [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.4.4.1 Applicability

The exclusive use of natural gas in the burn-off oven is required by PTC No. 055-00038 and IDAPA 58.01.01.322.14.

5.4.4.2 Monitoring, Recordkeeping, and Reporting

No monitoring, recordkeeping, or reporting for natural gas use is required as a means to demonstrate compliance with the allowable NO_x emission limits. Potential NO_x emissions from the burn-off oven burner are so small and past modeling has indicated its operation at maximum capacity will not exceed any ambient air quality standard, that compliance with the NO_x emission rate limits is inherently demonstrated by limiting the heat-input capacity of the oven's burner and requiring it be fueled by natural gas exclusively. DEQ believes requiring monitoring and recordkeeping of fuel consumption is burdensome and serves no environmental benefit.

5.4.5 Permit Requirement - Minimum Oven Temperature - [IDAPA 58.01.01.322, 3/23/98 and PTC No. 055-00038, 3/15/02]

5.4.5.1 Applicability

The minimum oven operating temperature is an applicable requirement of the PTC.

5.4.5.2 Monitoring, Recordkeeping, and Reporting

The following monitoring and recordkeeping requirements are to assure compliance with the minimum operating temperature requirement:

1. The temperature shall be recorded daily while the burn-off oven is operating at normal capacity.

2. The monitoring device must be certified by the manufacturer to be accurate within 1% of the measured value, and must be calibrated on an annual basis in accordance with manufacturer instructions.

5.4.6 Permit Requirement – Throughput Limit - [IDAPA 58.01.01.322.06.c, 5/1/94, and PTC No. 055-00038, 3/15/02]

5.4.6.1 Applicability

The throughput limit is an applicable requirement of the PTC.

5.4.6.2 Monitoring, Recordkeeping, and Reporting

The number of parts processed through the burn-off oven is limited to 6,000 per day. No monitoring or recordkeeping of throughput is required in the PTC. In order that throughput is enforceable in the OPERATING PERMIT, the permittee is required to monitor and record the number of parts processed through the burn-off oven daily when the oven is operated. The following monitoring and recordkeeping requirement is incorporated into the OPERATING PERMIT:

"*On days when the burn-off oven is operating, the permittee shall monitor and record the number of hooks and paint-encrusted parts processed on that day.*"

5.5 EMISSIONS UNIT – FACILITY-WIDE PAINT, SOLVENT, ADHESIVE, AND OTHER CHEMICAL USE

5.5.1 Emissions Unit Description

After metal furniture parts are made and cleaned, they are painted in one of six paint spray booths. The parts are then dried in a flash-off section and two-stage bake oven.

In panel manufacturing, steel sheets are cleaned. Water-based glue is applied, then the parts go through an electric oven to dry the glue to a tacky state. All these activities are insignificant activities.

The paint storage area is used to receive and store paints and solvents. The area also contains a distillation unit for recycling the flushing solvent used primarily during color changes. Paints are mixed in the mixing room, then moved to the pump room or the pump station.

Work surfaces are manufactured from particleboard. Thin sheets of laminate are glued to the fiberboard with a roll coat application process and water-base glue. Work surfaces are cut to shape on either a panel saw or router. Sawdust is collected in one of two baghouses that return filtered air into the room. The laminating and gluing processes are listed under insignificant activities. Solvent-based contact adhesive is used to glue melamine banding material to the wood, using a spray booth during the glue application.

The table below identifies the control devices used in controlling emissions from the sources regulated in this permit:

Table 5.5.1 PAINT SPRAY BOOTH EMISSIONS CONTROL DEVICES

Emission Unit(s) / Process(es)	Emission Control Device
6 paint spray booths	Paint reclaim system and dry filters

5.5.2 Permit Requirement - Facility-wide VOC Emissions Limits - [40 CFR 60, Subpart EE and PTC No. 055-00038, 3/15/02]

5.5.2.1 Applicability

Harpers is subject to the requirements of 40 CFR Part 60, Subpart EE, and PTC No. 055-00038.

5.5.2.2 Monitoring, Recordkeeping, and Reporting

The VOC content in the paint is regulated by 40 CFR Part 60, Subpart EE. The standard for VOC emissions, pursuant to 40 CFR Part 60, Subpart EE, is summarized below:

40 CFR 60.312, Standard for volatile organic compounds (VOC):

"(a) On and after the date on which the initial performance test required to be conducted by 60.8(a) is completed, no owner or operator subject to the provisions of this subpart shall cause the discharge into the atmosphere of VOC emissions from any metal furniture surface coating operation in excess of 0.90 kilogram of VOC per liter of coating solids applied."

The VOC emission estimates used to establish the monthly and annual permit limits are based on the VOC content in the paints, coatings, and glues, and the amount of each product used.

Performance testing is required by Subpart EE, but the regulation allows for alternative agreements with the facility in lieu of performance testing. The facility has an agreement with the EPA, as discussed in this excerpt from the technical memorandum, dated October 17, 2001, as follows:

"Harpers is subject to 40 CFR 60 Subpart EE - Standards of Performance for Surface Coating of Metal Furniture. The applicable requirements were included in the PTC during previous permitting actions. A May 24, 1993, letter from Ann Pontius, Chief of EPA's Region 10 Air Compliance and Permitting Section, allows Harpers to perform monthly calculations to determine compliance in lieu of monthly performance source tests."

The permit contains four requirements to monitor, record, and report VOC emissions. For details, see Permit Conditions 5.9, 5.12, 5.13, and 5.17.

5.5.3 Permit Requirement – PM_{10} Emissions Limits - [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.5.3.1 Applicability

Harpers is subject to the PM_{10} emission rate limits contained in PTC No. 055-00038, 3/15/02. The emissions standards are applicable for Tier I permitting requirements in accordance with IDAPA 58.01.01.322.

5.5.3.2 Monitoring, Recordkeeping, and Reporting

There are many requirements for monitoring, recordkeeping, and reporting to show compliance with the PM_{10} emissions limits. See Permit Conditions 5.10, 5.12, 5.13, 5.16, and 5.17 for more details.

5.5.4 Permit Requirement – Formaldehyde Emissions Limits - [IDAPA 58.01.01.585 and 586 (State Only), 6/30/95, and PTC No. 055-00038, 3/15/02]

5.5.4.1 Applicability

Harpers is subject to the emissions limits contained in IDAPA 58.01.01.585 and 586 (state-only) and PTC No. 055-00038.

5.5.4.2 Monitoring, Recordkeeping, and Reporting

This information was taken from the PTC for this facility. See Permit Conditions 5.15 and 5.18.

5.5.5 Permit Requirement – Opacity - [IDAPA 58.01.01.625, 4/5/00, and PTC No. 055-00038, 3/15/02]

5.5.5.1 Applicability

Harpers is subject to the requirements contained in IDAPA 58.01.01.625 and PTC No. 055-00038.

5.5.5.2 Monitoring, Recordkeeping, and Reporting

The opacity requirement is regulated by Permit Conditions 1.8, 1.10, and 1.11. No additional monitoring, recordkeeping, testing, or reporting is required.

5.5.6 Permit Requirement – Natural Gas Use - [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.5.6.1 Applicability

Harpers is subject to a fuel type limitation by PTC No. 055-00038. Limitations for the purposes of Tier I operating permits are allowed under IDAPA 58.01.01.322.

5.5.6.2 Monitoring, Recordkeeping, and Reporting

The requirement to use natural gas exclusively.

5.5.7 Permit Requirement – Paint Overspray - [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.5.7.1 Applicability

IDAPA 58.01.01.322 and draft PTC No. 055-00038 are applicable requirements for this source.

5.5.7.2 Monitoring, Recordkeeping, and Reporting

The permit contains the following permit condition: "*The permittee shall install, maintain, and operate a paint reclaim system on each of the six metal paint booths. The reclaim system shall have a minimum efficiency of 70% retrieval of paint overspray. The retrieval efficiency shall be documented by manufacturer's specifications, which shall remain onsite and be made available to DEQ upon request.*"

5.5.8 Permit Requirement – Particulate Matter – [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.5.8.1 Applicability

IDAPA 58.01.01.322 and draft PTC No. 055-00038 are applicable requirements for this source.

5.5.8.2 Monitoring, Recordkeeping, and Reporting

The permittee shall monitor and record the days of operation for each of the spray paint booths in the sheet metal painting process, work surfaces contact adhesive application process, and Reasons spray booth. The permittee shall also record the date and time that each filter is changed to demonstrate compliance with Permit Condition 5.8. The reason for the filter change shall also be noted (i.e., routine maintenance or damaged filter). The records shall be maintained onsite for a minimum of five years and shall be made available to DEQ representatives upon request.

5.5.9 Permit Requirement – Filter Replacement – [IDAPA 58.01.01.322, 3/23/98, and PTC No. 055-00038, 3/15/02]

5.5.9.1 Applicability

IDAPA 58.01.01.322 and draft PTC No. 055-00038 are applicable requirements for this source.

5.5.9.2 Monitoring, Recordkeeping, and Reporting

The permittee shall monitor and record the days of operation of each for the spray paint booths in the sheet metal painting process, work surfaces contact adhesive application process, and Reasons spray booth. The permittee shall also record the date and time that each filter is changed to demonstrate compliance with Permit Condition 5.8. The reason for the filter change shall also be noted (i.e., routine maintenance or

damaged filter). The records shall be maintained onsite for a minimum of five years and shall be made available to DEQ representatives upon request.

6. INSIGNIFICANT ACTIVITIES

Listed in Table 6.1 are the insignificant activities described by the source in accordance with IDAPA 58.01.01.317

Table 6.1 INSIGNIFICANT ACTIVITIES

Description	Insignificant Activities Section Citation IDAPA 58.01.01.317.01
Five natural gas space heaters 2.2 MMBtu/hr each	b.i.18
One natural gas space heater 1.0 MMBtu/hr	b.i.18
One natural gas burner on stage 1 of the paint line parts washer, 3.8 MMBtu/hr	b.i.5
One natural gas burner on stage 2 of the paint line parts washer, <5.0 MMBtu/hr	b.i.5
One natural gas burner on stage 4 of the paint line parts washer, 3.8 MMBtu/hr	b.i.5
One natural gas burner on stage 5 of the paint line parts washer, <5.0 MMBtu/hr	b.i.5
One natural gas burner on the panel washer 2.0 MMBtu/hr	b.i.5
Two wood-dust baghouses located inside the building with exhaust air being ducted inside the building, no air exhausted outside	b.i.30
54 spot welders	a.i.12
6 brazing stations	a.i.12
One natural gas burner located on the air make-up unit for the storage, mixing and pump rooms, 0.80 MMBtu/hr	b.i.5 and b.i.18
One natural gas burner located on the air make-up unit for the west office area 0.40 MMBtu/hr	b.i.5 and b.i.18
One natural gas burner located on the air make-up unit for the east office area 0.40 MMBtu/hr	b.i.5 and b.i.18
One natural gas burner located on the air make-up unit for the receiving office area 1.75 MMBtu/hr	b.i.5 and b.i.18
One natural gas burner located on the air make-up unit for the factory break room area 0.25 MMBtu/hr	b.i.5 and b.i.18
One natural gas burner located on the air make-up unit for the work surfaces manufacturing area, 3.0 MMBtu/hr	b.i.5 and b.i.18
One natural gas burner located on the air make-up unit for the maintenance shop and tool and die room, 0.90 MMBtu/hr	b.i.5 and b.i.18
Natural gas heat pump loop system 0.50 MMBtu/hr	b.i.5
Natural gas snow melt system 1.0 MMBtu/hr	b.i.5
Natural gas hot water heater for bathrooms 0.75 MMBtu/hr	b.i.18
Various bathroom and sewer vents	a.i.42 and 43
One natural gas emergency generator 0.72 MMBtu/hr	b.i.5
Various roof-mounted exhaust fans for pulling out hot air in summer, 15,600 CFM each	a.i.41
Various opaque smoke vents to be used in the event of fire	a.i.46

Water-base glue application	b.i.25 and 30
Rinse-off booth to rinse off ash from hangers after burn-off oven	b.i.30
Electric test oven located in the metal paint area	a.i.45
Two electric infrared ovens located in the panel manufacturing area	a.i.45
Various battery chargers located throughout the building	a.i.67
Make-up air unit #9 (H-40 & H-42) 5.8 MMBtu/hr	b.i.30
Parts washer, stage 5, water heater 5.3 MMBtu/hr	b.i.30

The natural gas-fired make-up air unit and the parts washer listed are insignificant activities because the potential emissions are less than 10% of the significant rate as listed in IDAPA 58.01.01.006.92. The following example calculation supports this determination.

Example calculation: Assume a 5.8 MMBtu/hr natural gas-fired burner operating continuously. Determine the burner potential to emit NO_x.

Hourly NO_x PTE:

5.8 MMBtu/hr x 1scf/1,050 Btu x 2.2 lb NO_x /MMscf = 0.012 lb NO_x /hr

Annual NO_x PTE:

0.012 lb NO_x /hr x 8,760 hr/yr x 1ton/2000 lb = 0.053 T NO_x/yr

The significant emission rate for NO_x is 40 T/yr, as defined in IDAPA 58.01.01.006.92. To be an insignificant activity in accordance with IDAPA 58.01.01.317.b.i.(30), emissions must be 10% of the respective significant emission rate. For this example, NO_x emissions must be less than 4.0 T/yr (40 T/yr x 0.10). As indicated, potential NO_x emissions from the 5.8 MMBtu/hr burner are much less than 4.0 T/yr, thereby demonstrating the burner is an insignificant activity.

The 5.8 MMBtu/hr burner used in the example above was chosen because it represents the largest heat-input capacity of all the emissions units listed in Table 6.1. Because the largest emissions unit (in terms of heat rate) has potential emissions that are two orders of magnitude less than the applicable regulation, all other emissions units listed in Table 6.1 are also insignificant activities.

7. ALTERNATIVE OPERATING SCENARIOS

There were not alternative operating scenarios requested by the facility.

8. TRADING SCENARIOS

There were no trading scenarios requested by the facility.

9. COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION

9.1 COMPLIANCE PLAN

Harpers certified compliance with all applicable requirements. No compliance plan was submitted.

9.2 COMPLIANCE CERTIFICATION

Harpers will be required to periodically certify compliance in accordance with General Permit Provision 13.21.

10. ACID RAIN PERMIT

Harpers is not subject to the acid rain permitting requirements of 40 CFR Part 72 through 75.

11. AIRS DATABASE

AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N - Nonattainment
SO_2	B						U
Nox	B						U
CO	B						U
PM_{10}	B						U
PM	B						
VOC	A		*			A	
Total HAPs	A					A	
			APPLICABLE SUBPART				
			EE				

AIRS/AFS CLASSIFICATION CODES:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.

SM = Potential emissions fall below applicable major source thresholds **if and only if** the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

12. REGISTRATION FEES

Harpers shall determine annual emissions in a manner consistent with IDAPA 58.01.01.525 for the purposes of registration fees. DEQ received a fee payment of $5,000 on May 1, 2002. At this time, Harpers is current on registration fees.

13. ***RECOMMENDATION***

Based on the Tier I application and review of all applicable state and federal rules and regulations, staff recommends DEQ issue final Tier I operating permit No. 005-00038 to Harpers, Inc. for their Post Falls facility.

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